



Analytical Laboratory

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13339 Hagers Ferry Road
Huntersville, NC 28078-7929
McGuire Nuclear Complex - MG03A2
Phone: 980-875-5245 Fax: 980-875-4349

Order Summary Report

Order Number: J12110008

Customer Name(s): Bill K, Wayne C, Melonie M, and Tom J

Customer Address: 3195 Pine Hall Rd
Mailcode: Belews Steam Station
Belews Creek, NC 28012

Lab Contact: Jason C Perkins **Phone:** 980-875-5348

Report Authorized By: _____ **Date:** 11/19/2012
(Signature)

Program Comments:

Please contact the Program Manager (Jason C Perkins) with any questions regarding this report.

Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted. Subcontracted data included on the Duke Certificate of Analysis is to be used as information only. Certified vendor results can be found in the subcontracted lab final report. Duke Energy Analytical Laboratory subcontracts analyses to other vendor laboratories that have been qualified by Duke Energy to perform these analyses except where noted.

Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

Sample ID's & Descriptions:

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2012023312	BELEWS	31-Oct-12 1:20 PM	TRAVIS THORNTON	FGD Purge Eff
2012023313	BELEWS	31-Oct-12 7:30 AM	TRAVIS THORNTON	EQ TANK
2012023314	BELEWS	31-Oct-12 7:35 AM	TRAVIS THORNTON	BIOREACTOR 1 INF
2012023315	BELEWS	31-Oct-12 7:40 AM	TRAVIS THORNTON	biOREACTOR 1 INF HG BLK
2012023316	BELEWS	31-Oct-12 7:45 AM	TRAVIS THORNTON	BIOREACTOR 2 INF.
2012023317	BELEWS	31-Oct-12 7:50 AM	TRAVIS THORNTON	BIOREACTOR 2 INF. HG BLANK
2012023318	BELEWS	31-Oct-12 7:55 AM	TRAVIS THORNTON	BIOREACTOR 2 EFF.
2012023319	BELEWS	31-Oct-12 8:00 AM	TRAVIS THORNTON	BIOREACTOR 2 EFF. HG BLANK
2012023320	BELEWS	31-Oct-12 8:05 AM	TRAVIS THORNTON	FILTER BLANK
9 Total Samples				

Technical Validation Review

Checklist:

COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).

☒ Yes

☐ No

All Results are less than the laboratory reporting limits.

☐ Yes

☒ No

All laboratory QA/QC requirements are acceptable.

☒ Yes

☐ No

Report Sections Included:

☒ Job Summary Report

☒ Sample Identification

☒ Technical Validation of Data Package

☒ Analytical Laboratory Certificate of Analysis

☐ Analytical Laboratory QC Report

☒ Sub-contracted Laboratory Results

☐ Customer Specific Data Sheets, Reports, & Documentation

☐ Customer Database Entries

☒ Chain of Custody

☒ Electronic Data Deliverable (EDD) Sent Separately

Reviewed By: DBA Account

Date: 11/19/2012

Certificate of Laboratory Analysis

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*This report shall not be reproduced, except in full.***Order # J12110008**

Site: FGD Purge Eff

Collection Date: 31-Oct-12 1:20 PM

Sample #: 2012023312

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>								
Bromide	83	mg/L		5	50	EPA 300.0	11/12/2012 18:52	JAHERMA
Chloride	5700	mg/L		100	1000	EPA 300.0	11/12/2012 18:52	JAHERMA
Sulfate	1100	mg/L		100	1000	EPA 300.0	11/12/2012 18:52	JAHERMA
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	106	ug/L		5	100	EPA 245.1	11/08/2012 14:05	AGIBBS
<u>DISSOLVED METALS BY ICP</u>								
Manganese (Mn)	5.07	mg/L		0.05	10	EPA 200.7	11/05/2012 12:54	DJSULL1
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Boron (B)	137	mg/L		0.5	10	EPA 200.7	11/09/2012 12:43	DJSULL1
Calcium (Ca)	3440	mg/L		0.1	10	EPA 200.7	11/09/2012 12:43	DJSULL1
Iron (Fe)	92.5	mg/L		0.1	10	EPA 200.7	11/09/2012 12:43	DJSULL1
Magnesium (Mg)	537	mg/L		0.05	10	EPA 200.7	11/09/2012 12:43	DJSULL1
Manganese (Mn)	5.68	mg/L		0.05	10	EPA 200.7	11/09/2012 12:43	DJSULL1
<u>DISSOLVED METALS BY ICP-MS</u>								
Selenium (Se)	228	ug/L		10	10	EPA 200.8	11/09/2012 14:40	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	201	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
Chromium (Cr)	220	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
Copper (Cu)	153	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
Nickel (Ni)	193	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
Selenium (Se)	4480	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
Silver (Ag)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
Zinc (Zn)	308	ug/L		10	10	EPA 200.8	11/09/2012 13:55	KRICHAR
<u>SELENIUM SPECIATION - (Analysis Performed by Applied Speciation and Consulting, LLC)</u>								
Vendor Parameter	Complete					Vendor Method	V_AS&C	
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	17000	mg/L		200	1	SM2540C	11/12/2012 16:32	SWILLI3
<u>TOTAL SUSPENDED SOLIDS</u>								
TSS	3500	mg/L		250	1	SM2540D	11/05/2012 10:56	SWILLI3

Certificate of Laboratory Analysis

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*This report shall not be reproduced, except in full.***Order # J12110008**

Site: EQ TANK

Collection Date: 31-Oct-12 7:30 AM

Sample #: 2012023313

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	117	ug/L		2.5	50	EPA 245.1	11/08/2012 14:07	AGIBBS
<u>DISSOLVED METALS BY ICP</u>								
Manganese (Mn)	4.35	mg/L		0.05	10	EPA 200.7	11/05/2012 12:58	DJSULL1
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Boron (B)	133	mg/L		0.5	10	EPA 200.7	11/09/2012 12:47	DJSULL1
Calcium (Ca)	3460	mg/L		0.1	10	EPA 200.7	11/09/2012 12:47	DJSULL1
Iron (Fe)	91.4	mg/L		0.1	10	EPA 200.7	11/09/2012 12:47	DJSULL1
Magnesium (Mg)	542	mg/L		0.05	10	EPA 200.7	11/09/2012 12:47	DJSULL1
Manganese (Mn)	5.48	mg/L		0.05	10	EPA 200.7	11/09/2012 12:47	DJSULL1
<u>DISSOLVED METALS BY ICP-MS</u>								
Selenium (Se)	188	ug/L		10	10	EPA 200.8	11/09/2012 14:43	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	201	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR
Chromium (Cr)	218	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR
Copper (Cu)	144	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR
Nickel (Ni)	192	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR
Selenium (Se)	4660	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR
Silver (Ag)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR
Zinc (Zn)	284	ug/L		10	10	EPA 200.8	11/09/2012 13:58	KRICHAR

Site: BIOREACTOR 1 INF

Collection Date: 31-Oct-12 7:35 AM

Sample #: 2012023314

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)</u>								
Vendor Parameter	Complete					Vendor Method		V_BRAND
<u>DISSOLVED METALS BY ICP</u>								
Manganese (Mn)	0.950	mg/L		0.05	10	EPA 200.7	11/05/2012 13:02	DJSULL1
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Boron (B)	127	mg/L		0.5	10	EPA 200.7	11/09/2012 12:51	DJSULL1
Calcium (Ca)	2940	mg/L		0.1	10	EPA 200.7	11/09/2012 12:51	DJSULL1
Iron (Fe)	< 0.1	mg/L		0.1	10	EPA 200.7	11/09/2012 12:51	DJSULL1
Magnesium (Mg)	514	mg/L		0.05	10	EPA 200.7	11/09/2012 12:51	DJSULL1
Manganese (Mn)	1.01	mg/L		0.05	10	EPA 200.7	11/09/2012 12:51	DJSULL1

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*This report shall not be reproduced, except in full.***Order # J12110008**

Site: BIOREACTOR 1 INF

Collection Date: 31-Oct-12 7:35 AM

Sample #: 2012023314

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>DISSOLVED METALS BY ICP-MS</u>								
Selenium (Se)	110	ug/L		10	10	EPA 200.8	11/09/2012 14:46	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR
Chromium (Cr)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR
Copper (Cu)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR
Nickel (Ni)	14.7	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR
Selenium (Se)	102	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR
Silver (Ag)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR
Zinc (Zn)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:01	KRICHAR

SELENIUM SPECIATION - (Analysis Performed by Applied Speciation and Consulting, LLC)

Vendor Parameter	Complete	Vendor Method	V_AS&C
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Site: biOREACTOR 1 INF HG BLK

Collection Date: 31-Oct-12 7:40 AM

Sample #: 2012023315

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)</u>								
Vendor Parameter	Complete					Vendor Method		V_BRAND

Site: BIOREACTOR 2 INF.

Collection Date: 31-Oct-12 7:45 AM

Sample #: 2012023316

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)</u>								
Vendor Parameter	Complete					Vendor Method		V_BRAND
<u>DISSOLVED METALS BY ICP</u>								
Manganese (Mn)	1.11	mg/L		0.05	10	EPA 200.7	11/05/2012 13:06	DJSULL1
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Boron (B)	123	mg/L		0.5	10	EPA 200.7	11/09/2012 12:55	DJSULL1
Calcium (Ca)	2870	mg/L		0.1	10	EPA 200.7	11/09/2012 12:55	DJSULL1
Iron (Fe)	< 0.1	mg/L		0.1	10	EPA 200.7	11/09/2012 12:55	DJSULL1
Magnesium (Mg)	499	mg/L		0.05	10	EPA 200.7	11/09/2012 12:55	DJSULL1
Manganese (Mn)	1.13	mg/L		0.05	10	EPA 200.7	11/09/2012 12:55	DJSULL1

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Site: BIOREACTOR 2 INF.

Collection Date: 31-Oct-12 7:45 AM

Sample #: 2012023316

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>DISSOLVED METALS BY ICP-MS</u>								
Selenium (Se)	12.5	ug/L		10	10	EPA 200.8	11/09/2012 14:49	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
Chromium (Cr)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
Copper (Cu)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
Nickel (Ni)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
Selenium (Se)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
Silver (Ag)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
Zinc (Zn)	< 10	ug/L		10	10	EPA 200.8	11/09/2012 14:04	KRICHAR
<u>SELENIUM SPECIATION - (Analysis Performed by Applied Speciation and Consulting, LLC)</u>								
Vendor Parameter	Complete					Vendor Method		V_AS&C

Site: BIOREACTOR 2 INF. HG BLANK

Collection Date: 31-Oct-12 7:50 AM

Sample #: 2012023317

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)</u>								
Vendor Parameter	Complete					Vendor Method		V_BRAND

Site: BIOREACTOR 2 EFF.

Collection Date: 31-Oct-12 7:55 AM

Sample #: 2012023318

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>								
Bromide	81	mg/L		5	50	EPA 300.0	11/12/2012 19:11	JAHERMA
Chloride	6000	mg/L		100	1000	EPA 300.0	11/12/2012 19:11	JAHERMA
Sulfate	1200	mg/L		100	1000	EPA 300.0	11/12/2012 19:11	JAHERMA
<u>MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)</u>								
Vendor Parameter	Complete					Vendor Method		V_BRAND
<u>DISSOLVED METALS BY ICP</u>								
Manganese (Mn)	1.35	mg/L		0.05	10	EPA 200.7	11/05/2012 13:10	DJSULL1

Certificate of Laboratory Analysis

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*This report shall not be reproduced, except in full.***Order # J12110008**

Site: BIOREACTOR 2 EFF.

Collection Date: 31-Oct-12 7:55 AM

Sample #: 2012023318

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Boron (B)	121	mg/L		0.5	10	EPA 200.7	11/09/2012 12:59	DJSULL1
Calcium (Ca)	3030	mg/L		0.1	10	EPA 200.7	11/09/2012 12:59	DJSULL1
Iron (Fe)	< 0.1	mg/L		0.1	10	EPA 200.7	11/09/2012 12:59	DJSULL1
Magnesium (Mg)	511	mg/L		0.05	10	EPA 200.7	11/09/2012 12:59	DJSULL1
Manganese (Mn)	1.41	mg/L		0.05	10	EPA 200.7	11/09/2012 12:59	DJSULL1
<u>DISSOLVED METALS BY ICP-MS</u>								
Selenium (Se)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:52	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
Cadmium (Cd)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
Chromium (Cr)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
Copper (Cu)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
Nickel (Ni)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
Selenium (Se)	5.48	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
Silver (Ag)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
Zinc (Zn)	< 5	ug/L		5	5	EPA 200.8	11/09/2012 14:07	KRICHAR
<u>SELENIUM SPECIATION - (Analysis Performed by Applied Speciation and Consulting, LLC)</u>								
Vendor Parameter	Complete					Vendor Method	V_AS&C	

Site: BIOREACTOR 2 EFF. HG BLANK

Collection Date: 31-Oct-12 8:00 AM

Sample #: 2012023319

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)</u>								
Vendor Parameter	Complete					Vendor Method	V_BRAND	

Site: FILTER BLANK

Collection Date: 31-Oct-12 8:05 AM

Sample #: 2012023320

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>DISSOLVED METALS BY ICP</u>								
Manganese (Mn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/05/2012 12:11	DJSULL1
<u>DISSOLVED METALS BY ICP-MS</u>								
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/09/2012 14:56	KRICHAR



**APPLIED SPECIATION
AND CONSULTING, LLC**

18804 Northcreek Parkway Bothell, WA, 98011
Tel: (425) 483-3300 Fax: (425) 483-9818
www.appliedspeciation.com

November 9, 2012

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078
(704) 875-5245

Project: Belews Creek (Flex Fuel) - WW (LIMS # J12110008)

Dear Mr. Perkins,

Attached is the report associated with four (4) aqueous samples submitted for selenium speciation analysis on November 1, 2012. The samples were received in a sealed cooler at -0.2°C on November 2, 2012. Selenium speciation analysis was performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS). Any issues associated with the analysis are addressed in the following report.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Gerads", written over a light blue horizontal line.

Russell Gerads
Vice President
Applied Speciation and Consulting, LLC

Applied Speciation and Consulting, LLC

Report prepared for:

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078

Project: Belews Creek (Flex Fuel) - WW (LIMS # J12110008)

November 9, 2012

1. Sample Reception

Four (4) aqueous samples in 125mL HDPE bottles (provided by Applied Speciation and Consulting) were submitted for selenium speciation analysis on November 1, 2012. The samples were received on November 2, 2012 in a sealed container at -0.2°C.

The samples were received in a laminar flow clean hood, void of trace metals contamination and ultra-violet radiation, and were designated discrete sample identifiers. An aliquot of each sample was filtered (0.45µm) and each filtrate was stored in a secure, monitored cryofreezer (maintained at a temperature of -80°C) until selenium speciation analysis could be performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS).

2. Sample Preparation

All sample preparation is performed in laminar flow clean hoods known to be free from trace metals contamination. All applied water for dilutions and sample preservatives are monitored for contamination to account for any biases associated with the sample results.

Selenium Speciation Analysis by IC-ICP-DRC-MS Prior to analysis, an aliquot of each sample was filtered with a syringe filter (0.45µm) and injected directly into an autosampler vial. No further sample preparation was performed as any chemical alteration of a sample may shift the equilibrium of the system, resulting in changes in speciation ratios.

3. Sample Analysis

All sample analysis is preceded by a minimum of a five-point calibration curve spanning the entire concentration range of interest. Calibration curves are performed at the beginning of

each analytical day. All calibration curves, associated with each species of interest, are standardized by linear regression resulting in a response factor. All sample results are **instrument blank corrected** to account for any operational biases associated with the analytical platform.

Prior to sample analysis, all calibration curves are verified using second source standards which are identified as initial calibration verification standards (ICV).

Ongoing instrument performance is identified by the analysis of continuing calibration verification standards (CCV) and continuing calibration blanks (CCB) at a minimum interval of every ten analytical runs.

Selenium Speciation Analysis by IC-ICP-DRC-MS Each sample for selenium speciation analysis was analyzed by ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS) on November 8, 2012. An aliquot of each sample is injected onto an anion exchange column and mobilized by a basic ($\text{pH} > 7$) gradient. The eluting selenium species are then introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (DRC) containing a reaction gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system.

Retention times for each eluting species are compared to known standards for species identification.

4. Analytical Issues

The overall analyses went well and no significant analytical issues were encountered. All quality control parameters associated with the samples were within acceptance limits.

The estimated method detection limits (eMDLs) for selenite, selenate, and selenocyanate are generated from replicate analyses of the lowest standard in the calibration curve. Not all selenium species are present in preparation blanks; therefore, eMDL calculations based on preparation blanks are artificially biased low.

The eMDL for methylseleninic acid and selenomethionine is calculated from the average eMDL of selenite, selenate, and selenocyanate. The calibration does not contain methylseleninic acid or selenomethionine due to impurities in these standards which would bias the results for other selenium species.

If you have any questions or concerns regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Russell Gerads', with a large, sweeping flourish extending to the right.

Russell Gerads
Vice President
Applied Speciation and Consulting, LLC

Selenium Speciation Results for Duke Energy
 Project Name: Belews Creek (Flex Fuel) - WW
 Contact: Jay Perkins
 LIMS #J12110008

Date: November 9, 2012
 Report Generated by: Russell Gerads
 Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMe	Unknown Se Species (n)
FGD Purge Eff	118	78.5	ND (<2.5)	4.0	ND (<3.2)	0.0 (0)
BioReactor 1 Inf	18.0	57.7	ND (<0.63)	2.12	ND (<0.81)	2.79 (1)
BioReactor 2 Inf	0.92	ND (<0.95)	ND (<0.63)	ND (<0.81)	ND (<0.81)	0.0 (0)
BioReactor 2 Eff	ND (<0.85)	ND (<0.95)	ND (<0.63)	ND (<0.81)	ND (<0.81)	0.0 (0)

All results reflect the applied dilution and are reported in µg/L

ND = Not detected at the applied dilution

SeCN = Selenocyanate

MeSe(IV) = Methylseleninic acid

SeMe = Selenomethionine

Unknown Se Species = Total concentration of all unknown Se species observed by IC-ICP-MS

Selenium Speciation Results for Duke Energy
 Project Name: Belews Creek (Flex Fuel) - WW
 Contact: Jay Perkins
 LIMS #J12110008

Date: November 9, 2012
 Report Generated by: Russell Gerads
 Applied Speciation and Consulting, LLC

Quality Control Summary - Preparation Blank Summary

Analyte (µg/L)	PBW1	PBW2	PBW3	PBW4	Mean	StdDev	eMDL*	eMDL 50x	eMDL 200x
Se(IV)	0.00	0.00	0.00	0.00	0.00	0.00	0.017	0.85	3.4
Se(VI)	0.00	0.00	0.00	0.00	0.00	0.00	0.019	0.95	3.8
SeCN	0.00	0.00	0.00	0.00	0.00	0.00	0.013	0.63	2.5
MeSe(IV)	0.00	0.00	0.00	0.00	0.00	0.00	0.016	0.81	3.2
SeMe	0.00	0.00	0.00	0.00	0.00	0.00	0.016	0.81	3.2

eMDL = Estimated Method Detection Limit

*Please see narrative regarding eMDL calculations

Quality Control Summary - Certified Reference Materials

Analyte (µg/L)	CRM	True Value	Result	Recovery
Se(IV)	LCS	9.57	9.11	95.2
Se(VI)	LCS	9.48	8.44	89.0
SeCN	LCS	8.92	8.31	93.2
MeSe(IV)	LCS	6.47	6.31	97.5
SeMe	LCS	9.32	8.29	89.0

Selenium Speciation Results for Duke Energy
 Project Name: Belews Creek (Flex Fuel) - WW
 Contact: Jay Perkins
 LIMS #J12110008

Date: November 9, 2012
 Report Generated by: Russell Gerads
 Applied Speciation and Consulting, LLC

Quality Control Summary - Matrix Duplicates

Analyte (µg/L)	Sample ID	Rep 1	Rep 2	Mean	RPD
Se(IV)	BioReactor 2 Eff	ND (<0.85)	ND (<0.85)	NC	NC
Se(VI)	BioReactor 2 Eff	ND (<0.95)	ND (<0.95)	NC	NC
SeCN	BioReactor 2 Eff	ND (<0.63)	ND (<0.63)	NC	NC
MeSe(IV)	BioReactor 2 Eff	ND (<0.81)	ND (<0.81)	NC	NC
SeMe	BioReactor 2 Eff	ND (<0.81)	ND (<0.81)	NC	NC

ND = Not detected at the applied dilution

NC = Value was not calculated due to one or more concentrations below the eMDL

Quality Control Summary - Matrix Spike/ Matrix Spike Duplicate

Analyte (µg/L)	Sample ID	Spike Conc	MS Result	Recovery	Spike Conc	MSD Result	Recovery	RPD
Se(IV)	BioReactor 2 Eff	278.0	251.4	90.4	278.0	259.2	93.2	3.1
Se(VI)	BioReactor 2 Eff	252.3	243.9	96.7	252.3	241.3	95.6	1.1
SeCN	BioReactor 2 Eff	228.8	199.0	87.0	228.8	194.4	85.0	2.4

November 16, 2012

Duke Energy
ATTN: Jay Perkins
Scientific Support-Laboratory
13339 Hagers Ferry Road
Huntersville NC 28078
jcperkins@duke-energy.com
labcustomer@duke-energy.com

RE: Project DUK-HV1201

Client Project: J12110008

Dear Mr. Perkins,

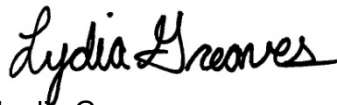
On November 02, 2012, Brooks Rand Labs (BRL) received three (3) wastewater samples and three (3) corresponding field blanks. An aliquot was removed from each sample bottle and filtered into a separate container designed for dissolved mercury (Hg) analysis. The sample volume from the original container was logged-in for total Hg analysis. All samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

Data used for regulatory purposes has a 24 hour filtration holding time requirement. Non-regulatory purposed data has a 48 hour filtration holding time. The samples were received within holding time.

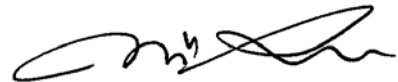
The results were blank-corrected as described in the calculations section of the relevant SOP and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. Aside from concentration qualifiers, all data was reported without further qualification and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more details, see the *Report Information* page of the report. Please feel free to contact me if you have any questions regarding this report.

Sincerely,



Lydia Greaves
Project Manager
lydia@brooksrands.com



Mi Sun Um
Data Manager
misun@brooksrands.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <<http://www.brooksrand.com/default.asp?contentID=586>>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	MS	matrix spike
BRL	Brooks Rand Labs	MSD	matrix spike duplicate
BS	laboratory fortified blank	ND	non-detect
CAL	calibration standard	NR	non-reportable
CCV	continuing calibration verification	PS	post preparation spike
COC	chain of custody record	REC	percent recovery
CRM	certified reference material	RPD	relative percent difference
D	dissolved fraction	RSD	relative standard deviation
DUP	duplicate	SCV	secondary calibration verification
ICV	initial calibration verification	SOP	standard operating procedure
MDL	method detection limit	SRM	standard reference material
MRL	method reporting limit	T	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Result is estimated.
J	Estimated value. A full explanation is presented in the narrative.
J-M	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N	Spike recovery was not within acceptance criteria. Result is estimated.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BRL.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
BioReactor 1 Inf	1244023-01	Influent	Sample	10/31/2012	11/02/2012
BioReactor 1 Inf	1244023-02	Influent	Sample	10/31/2012	11/02/2012
BioReactor 1 Inf Hg Blk	1244023-03	DIW	Field Blank	10/31/2012	11/02/2012
BioReactor 1 Inf Hg Blk	1244023-04	DIW	Field Blank	10/31/2012	11/02/2012
BioReactor 2 Inf	1244023-05	Influent	Sample	10/31/2012	11/02/2012
BioReactor 2 Inf	1244023-06	Influent	Sample	10/31/2012	11/02/2012
BioReactor 2 Inf Hg Blk	1244023-07	DIW	Field Blank	10/31/2012	11/02/2012
BioReactor 2 Inf Hg Blk	1244023-08	DIW	Field Blank	10/31/2012	11/02/2012
BioReactor 2 Eff	1244023-09	Effluent	Sample	10/31/2012	11/02/2012
BioReactor 2 Eff	1244023-10	Effluent	Sample	10/31/2012	11/02/2012
BioReactor 2 Eff Hg Blk	1244023-11	DIW	Field Blank	10/31/2012	11/02/2012
BioReactor 2 Eff Hg Blk	1244023-12	DIW	Field Blank	10/31/2012	11/02/2012

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
Hg	Water	EPA 1631	11/05/2012	11/09/2012	B122072	1200858

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
BioReactor 1 Inf										
1244023-01	Hg	Influent	T	105		3.79	10.1	ng/L	B122072	1200858
1244023-02	Hg	Influent	D	54.1		0.76	2.02	ng/L	B122072	1200858
BioReactor 1 Inf Hg Blk										
1244023-03	Hg	DIW	T	0.15	U	0.15	0.41	ng/L	B122072	1200858
1244023-04	Hg	DIW	D	0.15	U	0.15	0.40	ng/L	B122072	1200858
BioReactor 2 Eff										
1244023-09	Hg	Effluent	T	2.59		0.38	1.01	ng/L	B122072	1200858
1244023-10	Hg	Effluent	D	1.33		0.16	0.41	ng/L	B122072	1200858
BioReactor 2 Eff Hg Blk										
1244023-11	Hg	DIW	T	0.16	U	0.16	0.42	ng/L	B122072	1200858
1244023-12	Hg	DIW	D	0.15	U	0.15	0.41	ng/L	B122072	1200858
BioReactor 2 Inf										
1244023-05	Hg	Influent	T	20.4		0.38	1.01	ng/L	B122072	1200858
1244023-06	Hg	Influent	D	4.31		0.15	0.40	ng/L	B122072	1200858
BioReactor 2 Inf Hg Blk										
1244023-07	Hg	DIW	T	0.15	U	0.15	0.39	ng/L	B122072	1200858
1244023-08	Hg	DIW	D	0.15	U	0.15	0.41	ng/L	B122072	1200858

Accuracy & Precision Summary

Batch: B122072
Lab Matrix: Water
Method: EPA 1631

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B122072-SRM1	Certified Reference Material (1245026, NIST 1641d 1000x dilution)						
	Hg		15.68	15.38	ng/L	98% 85-115	
B122072-MS2	Matrix Spike (1244022-01)						
	Hg	101.2	1053	1126	ng/L	97% 71-125	
B122072-MSD2	Matrix Spike Duplicate (1244022-01)						
	Hg	101.2	1053	1073	ng/L	92% 71-125	5% 24
B122072-MS3	Matrix Spike (1244023-01)						
	Hg	104.5	1162	1181	ng/L	93% 71-125	
B122072-MSD3	Matrix Spike Duplicate (1244023-01)						
	Hg	104.5	1162	1236	ng/L	97% 71-125	5% 24

Method Blanks & Reporting Limits

Batch: B122072
Matrix: Water
Method: EPA 1631
Analyte: Hg

Sample	Result	Units
B122072-BLK1	-0.003	ng/L
B122072-BLK2	-0.01	ng/L
B122072-BLK3	0.008	ng/L
B122072-BLK4	0.005	ng/L

Average: 0.00
Limit: 0.50

Standard Deviation: 0.01
Limit: 0.10

MDL: 0.15
MRL: 0.41

Instrument Calibration

Sequence: 1200858
Instrument: THG-06(MerxT)
Date: 11/09/2012
Analyte: Hg

Total Mercury and Mercury Speciation by CVAFS
Method: EPA 1631

Lab ID	True Value	Result	Units	REC & Limits
1200858-IBL1		3.90	pg of Hg	
1200858-IBL2		4.98	pg of Hg	
1200858-IBL3		5.98	pg of Hg	
1200858-IBL4		6.46	pg of Hg	
1200858-CAL1	10.00	10.63	pg of Hg	106%
1200858-CAL2	25.00	25.09	pg of Hg	100%
1200858-CAL3	100.0	99.20	pg of Hg	99%
1200858-CAL4	500.0	488.6	pg of Hg	98%
1200858-CAL5	2500	2514	pg of Hg	101%
1200858-CAL6	10000	9644	pg of Hg	96%
1200858-ICV1	1568	1538	pg of Hg	98% 85-115
1200858-CCB1		7.41	pg of Hg	
1200858-CCV1	500.0	499.7	pg of Hg	100% 77-123
1200858-CCB2		5.67	pg of Hg	
1200858-CCB3		5.12	pg of Hg	
1200858-CCB4		5.18	pg of Hg	
1200858-CCV2	500.0	501.4	pg of Hg	100% 77-123
1200858-CCB5		5.17	pg of Hg	
1200858-CCV3	500.0	497.5	pg of Hg	99% 77-123
1200858-CCB6		5.19	pg of Hg	
1200858-CCV4	500.0	492.2	pg of Hg	98% 77-123
1200858-CCB7		6.12	pg of Hg	
1200858-CCV5	500.0	485.4	pg of Hg	97% 77-123
1200858-CCB8		4.59	pg of Hg	
1200858-CCV6	500.0	484.2	pg of Hg	97% 77-123
1200858-CCB9		5.47	pg of Hg	
1200858-CCV7	500.0	485.9	pg of Hg	97% 77-123
1200858-CCBA		4.72	pg of Hg	
1200858-CCV8	500.0	486.5	pg of Hg	97% 77-123
1200858-CCBB		5.76	pg of Hg	
1200858-CCV9	500.0	482.7	pg of Hg	97% 77-123
1200858-CCBC		4.04	pg of Hg	
1200858-CCVA	500.0	489.2	pg of Hg	98% 77-123
1200858-CCBD		4.32	pg of Hg	
1200858-CCVB	500.0	479.9	pg of Hg	96% 77-123
1200858-CCBE		3.89	pg of Hg	
1200858-CCVC	500.0	482.7	pg of Hg	97% 77-123
1200858-CCBF		4.06	pg of Hg	
1200858-CCVD	500.0	487.3	pg of Hg	97% 77-123
1200858-CCBG		4.06	pg of Hg	

Instrument Calibration

Sequence: 1200858
Instrument: THG-06(MerxT)
Date: 11/09/2012
Analyte: Hg

Total Mercury and Mercury Speciation by CVAFS
Method: EPA 1631

Lab ID	True Value	Result	Units	REC & Limits	
1200858-CCVE	500.0	488.5	pg of Hg	98%	77-123
1200858-CCBH		4.17	pg of Hg		
1200858-CCVF	500.0	461.8	pg of Hg	92%	77-123
1200858-CCBI		3.83	pg of Hg		
1200858-CCVG	500.0	472.0	pg of Hg	94%	77-123
1200858-CCBJ		5.18	pg of Hg		
1200858-CCVH	500.0	480.4	pg of Hg	96%	77-123
1200858-CCBK		3.69	pg of Hg		
1200858-ICV2	1568	1475	pg of Hg	94%	85-115
1200858-CCVI	500.0	503.2	pg of Hg	101%	77-123
1200858-CCBL		3.92	pg of Hg		
1200858-CCVJ	500.0	484.8	pg of Hg	97%	77-123
1200858-CCBM		3.26	pg of Hg		
1200858-CCVK	500.0	487.1	pg of Hg	97%	77-123
1200858-CCBN		3.41	pg of Hg		
1200858-CCVL	500.0	478.1	pg of Hg	96%	77-123
1200858-CCBO		3.00	pg of Hg		
1200858-CCVM	500.0	473.2	pg of Hg	95%	77-123
1200858-CCBP		3.23	pg of Hg		

Sample Containers

Lab ID: 1244023-01 Sample: BioReactor 1 Inf			Report Matrix: Influent Sample Type: Sample			Collected: 10/31/2012 Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	500 mL	71666330 10	none	n/a		Cooler
Lab ID: 1244023-02 Sample: BioReactor 1 Inf			Report Matrix: Influent Sample Type: Sample			Collected: 10/31/2012 Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71659890 20	none	n/a		Cooler
Lab ID: 1244023-03 Sample: BioReactor 1 Inf Hg Blk			Report Matrix: DIW Sample Type: Field Blank			Collected: 10/31/2012 Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	500 mL	71666330 10	none	n/a		Cooler
Lab ID: 1244023-04 Sample: BioReactor 1 Inf Hg Blk			Report Matrix: DIW Sample Type: Field Blank			Collected: 10/31/2012 Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71659890 20	none	n/a		Cooler
Lab ID: 1244023-05 Sample: BioReactor 2 Inf			Report Matrix: Influent Sample Type: Sample			Collected: 10/31/2012 Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	500 mL	71666330 10	none	n/a		Cooler
Lab ID: 1244023-06 Sample: BioReactor 2 Inf			Report Matrix: Influent Sample Type: Sample			Collected: 10/31/2012 Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71659890 20	none	n/a		Cooler

Sample Containers

Lab ID: 1244023-07			Report Matrix: DIW			Collected: 10/31/2012	
Sample: BioReactor 2 Inf Hg Blk			Sample Type: Field Blank			Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	500 mL	71666330 10	none	n/a		Cooler
Lab ID: 1244023-08			Report Matrix: DIW			Collected: 10/31/2012	
Sample: BioReactor 2 Inf Hg Blk			Sample Type: Field Blank			Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71659890 20	none	n/a		Cooler
Lab ID: 1244023-09			Report Matrix: Effluent			Collected: 10/31/2012	
Sample: BioReactor 2 Eff			Sample Type: Sample			Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	500 mL	71666330 10	none	n/a		Cooler
Lab ID: 1244023-10			Report Matrix: Effluent			Collected: 10/31/2012	
Sample: BioReactor 2 Eff			Sample Type: Sample			Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71659890 20	none	n/a		Cooler
Lab ID: 1244023-11			Report Matrix: DIW			Collected: 10/31/2012	
Sample: BioReactor 2 Eff Hg Blk			Sample Type: Field Blank			Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	500 mL	71666330 10	none	n/a		Cooler
Lab ID: 1244023-12			Report Matrix: DIW			Collected: 10/31/2012	
Sample: BioReactor 2 Eff Hg Blk			Sample Type: Field Blank			Received: 11/02/2012	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71659890 20	none	n/a		Cooler

Project ID: DUK-HV1201
PM: Tiffany Stilwater



Page 27 of 29
Client PM: Jay Perkins
Client PO: 141391

Shipping Containers

Cooler

Received: November 2, 2012 9:55
Tracking No: 535305195310 via FedEx
Coolant Type: Ice
Temperature: 0.8 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes



Duke Energy

Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

1)Project Name	Belews Creek (Flex Fuel) - WW		2)Phone No:
2) Client:	Melonie Martin, Wayne Chapman, Tom Johnson, Bill Kennedy		4)Fax No:
5)Project:	MBCFFLX01	6)Account:	Mail Code:
8)Oper. Unit:	BC01	9)Process:	10)Activity ID:
		NEXHSTK	

Analytical Laboratory Use Only									
LIMS # J721100008		Matrix: OTHER		Samples Originating From		NC SC			
Logged By SLB		Date & Time 11/11/12 0933		SAMPLE PROGRAM		Ground Water			
[Redacted]		41		Drinking Water		NPDES			
AS&C		Cooler Temp (C)		[Redacted]		UST			
PO#133241		15 Preserv.: 1=HCL 2=H ₂ SO ₄ 3=HNO ₃ 4=Ice 5=None		RCRA		Waste			
		4		4		3		3	
		4		4		3		3	

¹⁹Page 1 of 1
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

Brooks Rand
PO#141391

[illegible][illegible]

Customer to sign & date below - fill out from left to right.			
1) Relinquished By <i>Iravi Thornton</i>	Date/Time <i>10/31 14:00</i>	2) Accepted By <i>Courter</i>	Date/Time <i>10/31/12</i>
3) Relinquished By <i>Courter</i>	Date/Time <i>11/1/12 0930</i>	4) Accepted By <i>R L Bannis</i>	Date/Time <i>11/1/12 0930</i>
5) Relinquished By	Date/Time	6) Accepted By	Date/Time <i>11/2/12 0833</i>
7) Relinquished By <i>R L Bannis</i>	Date/Time <i>11/1/12 1300</i>	8) Accepted By	Date/Time
9) Seal/Locked By <i>R L Bannis</i>	Date/Time <i>11/1/12 1300</i>	10) Seal/Lock Opened By	Date/Time
11) Seal/Locked By	Date/Time	12) Seal/Lock Opened By	Date/Time
Comments _____ * Metals=TRM/IMS = As, Cd, Cr, Cu, Ni, Se, Ag, Zn TRM/ICP = B, Ca, Fe, Mg, Mn * No Hg 245.1			

Customer, IMPORTANT!
Please indicate desired turnaround.

22 Requested Turnaround

21 Days X

*7 Days

*48 Hr

*Vendor Lab 13 Days X

11-14-12



Duke Energy SM

Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

1) Project Name	Belews Creek (Flex Fuel) - WW		2) Phone No:
2) Client:	Melonie Martin, Wayne Chapman, Tom Johnson, Bill Kennedy		4) Fax No:
5) Project:	MBCFFLX01	6) Account:	Mail Code:
8) Oper. Unit:	BC01	9) Process:	10) Activity ID:
		NEXHSTK	

CORD AND ANALYSIS REQUEST FORM									
Analytical Laboratory Use Only									
LIMS # J12110008		Matrix: OTHER		Samples Originating From		NC _____ SC _____			
Logged By SLB		Date & Time 11/1/12 0933		SAMPLE PROGRAM		Ground Water			
Vendor		Cooler Temp (C) 41		Drinking Water		NPDES _____ UST _____ RCRA _____			
Vendor: ASC, Brooks Rand		¹⁵ Preserv.: 1=HCL 2=H ₂ SO ₄ 3=HNO ₃ 4=Ice 5=None		<div> <div>4</div> <div>4</div> <div>3</div> <div>3</div> <div>4</div> </div>					

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DISTRIBUTION Page 29 of 29
 ORIGINAL to LAB,
 COPY to CLIENT

LAB USE ONLY	
"Lab ID	
2012028312	13
	14
	15
	16
	17
	18
	19
↓	20

[illegible]

Customer to sign & date below - fill out from left to right.		Date/Time
1) Relinquished By <i>Travis Thornton</i>	Date/Time <i>10/31 14:00</i>	2) Accepted By <i>Courier</i>
3) Relinquished By <i>Courier</i>	Date/Time <i>11/1/12 0930</i>	4) Accepted By <i>R. L. Davis</i>
5) Relinquished By	Date/Time	6) Accepted By:
7) Relinquished By	Date/Time	8) Accepted By:
9) Seal/Locked By	Date/Time	10) Seal/Lock Opened By
11) Seal/Locked By	Date/Time	12) Seal/Lock Opened By
Comments	* Metals=TRM/IMS = As, Cd, Cr, Cu, Ni, Se, Ag, Zn TRM/ICP = B, Ca, Fe, Mg, Mn * No Hg 245.1	

Customer, IMPORTANT!

22 Requested Turnaround

21 Days X

*7 Days

- 48 Hr

*Vendor Lab 13 Days X